

Functional Hierarchy of Specific Roles

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 - 2.2 Trip Management
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 - 2.2.3 Edit trip details (date, miles, type, mode)
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 - 2.3 Data & Insights
 - 2.3.1 View real-time dashboard with cumulative data for the current season (miles logged, CO₂e reduced, trips logged, active participants)
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Functional Details of Specific Roles

1. Participant Role

1.1 Account Management

- **1.1.1 Sign Up**
 - **Summary:** The Sign Up process allows new users to create an account on the Sole Power app, providing basic personal information and selecting their preferred language.
 - **Description:**
 - **1.1.1.1 User interface for inputting personal information (name, email, password)**
 - The sign-up form will include fields for the user's full name, email address, and a strong password. Input validation will be implemented to ensure that the email address is in a valid format and the password meets the defined complexity requirements.
 - **1.1.1.2 Dropdown menu for selecting preferred language (English/Spanish)**
 - The app will support both English and Spanish languages. Users will be able to select their preferred language during the sign-up process, and the app interface will dynamically adjust to display content in the chosen language.
 - **1.1.1.3 Checkbox for agreeing to terms and conditions**
 - The sign-up form will include a checkbox for users to agree to the app's terms of service and privacy policy. This checkbox will be mandatory for completing the sign-up process.
 - **1.1.1.4 Option to join an existing team (requires admin approval)**
 - Users will have the option to join an existing team during the sign-up process. The team name will be displayed in a

dropdown menu, and the user will need to select the desired team. The request to join a team will be sent to the administrator for approval.

- **1.1.1.5 Option to create a new team (requires admin approval)**

- Users will have the option to create a new team during the sign-up process. They will need to provide a unique team name and a brief description. The request to create a new team will be sent to the administrator for approval.

- **1.1.2 Log In**

- **Summary:** The Log In process allows existing users to access their accounts using their registered email address and password.

- **Description:**

- **1.1.2.1 User interface for entering email and password**

- The login screen will include fields for the user's email address and password. Input validation will be implemented to ensure that the email address is in a valid format.

- **1.1.2.2 "Forgot Password" functionality with email-based password reset**

- The login screen will include a "Forgot Password" link. Clicking this link will trigger an email to the user's registered email address, containing a password reset link. The user can then click on the link to reset their password.

- **1.1.3 Profile Management**

- **Summary:** The Profile Management feature allows users to view and edit their personal information, including their name, email address, password, and team membership.

- **Description:**

- **1.1.3.1 User interface for viewing and editing personal information (name, email, password)**

- The profile management screen will display the user's current information (name, email address). Users will be able to edit their name and email address. They will also be able to change their password by entering their current password and a new password.

- **1.1.3.2 Option to change password (with validation)**

- The password change functionality will require the user to enter their current password and a new password. The new password will be validated to ensure it meets the defined complexity requirements.

- **1.1.3.3 Option to update associated email address (with validation)**

- The email address update functionality will require the user to enter a new email address. The new email address will be validated to ensure it is in a valid format.

- **1.1.3.4 Option to join or leave teams (requires admin approval)**

- The profile management screen will display the user's current team membership. Users will be able to request to join a new team or leave their current team. These requests will be sent to the administrator for approval.

- **1.1.4 Log Out**

- **Summary:** The Log Out feature allows users to securely exit their accounts and terminate their session.

- **Description:**

- **1.1.4.1 User interface for securely logging out of the app**

- The log out functionality will be implemented as a button on the app's main menu or within the user's profile settings. Clicking the log out button will terminate the user's session and clear any stored cookies or session tokens.

1.2 Trip Tracking

- **1.2.1 Trip Logging**

- **Summary:** The Trip Logging feature allows users to record their trips using GPS tracking or manual input, capturing details like distance, time, type, and mode of transportation.

- **Description:**

- **1.2.1.1 "Start Trip" button to initiate GPS tracking**

- The "Start Trip" button will initiate GPS tracking using the device's built-in GPS sensor. The app will record the user's starting location, time, and mode of transportation.

- **1.2.1.2 "End Trip" button to stop GPS tracking**

- The "End Trip" button will stop GPS tracking and record the user's ending location, time, and total distance traveled.

- **1.2.1.3 Dropdown menus for selecting trip type (work, errand, social, other) and mode of transportation (walk, bike, run, e-bike, skate, other)**

- The app will provide dropdown menus for users to select the type of trip (e.g., work, errand, social) and the mode of transportation used (e.g., walk, bike, run).

- **1.2.1.4 Option to manually input trip details (date, miles, type, mode)**

- Users will have the option to manually input trip details if GPS tracking is not available or if they prefer to enter the information manually. The app will validate the input fields to ensure that the data is accurate.

- **1.2.1.5 Automatic population of trip log with GPS data (distance, time, route)**

- The app will automatically populate the trip log with GPS data, including the distance traveled, time taken, and the route taken. The app will use a mapping API (e.g., Google Maps API) to display the route on a map.

- **1.2.2 Trip Management**

- **Summary:** The Trip Management feature allows users to view, edit, and delete their past trips, providing flexibility to manage their trip history.

- **Description:**

- **1.2.2.1 User interface for viewing past trips with details (date, time, distance, type, mode)**

- The trip management screen will display a list of the user's past trips, with details such as the date, time, distance, type,

and mode of transportation.

- **1.2.2.2 Option to edit trip details (date, miles, type, mode)**
 - Users will be able to edit the details of their past trips, including the date, distance, type, and mode of transportation. The app will validate the input fields to ensure that the data is accurate.
- **1.2.2.3 Option to delete trips from the log**
 - Users will be able to delete trips from their log if they are no longer relevant or if they contain errors.

1.3 Data & Insights

- **1.3.1 Personal Dashboard**
 - **Summary:** The Personal Dashboard provides users with a visual overview of their cumulative data for the current season, calendar year, and lifetime, showcasing their progress and impact.
 - **Description:**
 - **1.3.1.1 Display of cumulative data for the current season (Memorial Day - Columbus Day), calendar year, and lifetime (since account creation)**
 - The personal dashboard will display cumulative data for the current season, calendar year, and lifetime. The data will be aggregated and calculated based on the user's logged trips.
 - ****1.3.1.2 Metrics: Number of Trips, Total Mileage, Gas Saved (gallons), CO2e Reduced (Lbs), Money Saved (\$) ****
 - The dashboard will display the following metrics: the total number of trips logged, the total mileage traveled, the estimated amount of gas saved, the estimated amount of CO2e reduced, and the estimated amount of money saved.
- **1.3.2 Leaderboards**
 - **Summary:** The Leaderboards provide a competitive and motivating element, showcasing the ranking of individual participants and teams based on their progress.
 - **Description:**
 - **1.3.2.1 Individual Leaderboard: Display of individual participant data (username, team, trips logged, miles logged, gas saved, CO2e reduced, money saved)**
 - The individual leaderboard will display a list of all participants, ranked by their total miles logged, trips logged, gas saved, CO2e reduced, and money saved. The leaderboard will also display the user's team and username.
 - **1.3.2.2 Team Leaderboard: Display of team data (team name, number of members, miles logged, trips logged, CO2e reduced, gas saved)**
 - The team leaderboard will display a list of all teams, ranked by their total miles logged, trips logged, gas saved, and CO2e reduced. The leaderboard will also display the team name and the number of members in each team.
 - **1.3.2.3 Option to view historical data from previous years**
 - Users will be able to view historical data from previous years on both the individual and team leaderboards. This will allow users to track their progress over time and compare their performance to previous years.

1.4 Engagement & Rewards

- **1.4.1 Challenges & Incentives**
 - **Summary:** The Challenges & Incentives feature provides users with opportunities to participate in themed challenges, earn rewards, and stay motivated to engage with the program.
 - **Description:**
 - **1.4.1.1 Display of current challenges and rewards**
 - The app will display a list of current challenges, including the challenge name, start date, end date, goals, and rewards.
 - **1.4.1.2 Tracking of participant progress towards challenge goals**
 - The app will track participant progress towards challenge goals. Users will be able to view their progress on the challenges screen and receive notifications when they reach milestones.
 - **1.4.1.3 Notifications about upcoming challenges**
 - The app will send push notifications to users about upcoming challenges, including the challenge name, start date, and goals.
- **1.4.2 Social Sharing**
 - **Summary:** The Social Sharing feature allows users to share their progress and achievements with their social networks, promoting awareness and encouraging participation.
 - **Description:**
 - **1.4.2.1 Option to share trip data and progress on social media platforms (e.g., Facebook, Twitter)**
 - Users will be able to share their trip data and progress on social media platforms. The app will integrate with social media APIs to allow users to share their data with their friends and followers.
 - **1.4.2.2 Option to connect with other participants and teams**
 - The app will include social networking features that allow users to connect with other participants and teams. Users will be able to follow other users, send messages, and join groups.

1.5 Notifications

- **Summary:** The Notifications feature keeps users informed about important updates, challenges, and program announcements, ensuring they stay engaged and up-to-date.
- **Description:**

- **1.5.1 Push notifications for:**
 - **1.5.1.1 New challenges**
 - The app will send push notifications to users when new challenges are announced. The notifications will include the challenge name, start date, and goals.
 - **1.5.1.2 Team updates**
 - The app will send push notifications to users when there are updates to their team, such as new members joining or leaving the team.
 - **1.5.1.3 Personal progress updates**
 - The app will send push notifications to users when they reach milestones in their personal progress, such as completing a certain number of trips or reaching a specific mileage goal.
 - **1.5.1.4 Program announcements**
 - The app will send push notifications to users about important program announcements, such as changes to the program rules or new features being added to the app.

1.6 Help & Support

- **Summary:** The Help & Support feature provides users with access to resources and assistance, ensuring they can easily find answers to their questions and resolve any issues.
- **Description:**
 - **1.6.1 Access to FAQ section with common questions and answers**
 - The app will include an FAQ section that provides answers to common questions about the app and the Sole Power program.
 - **1.6.2 Option to contact support team via email or chat**
 - Users will be able to contact the support team via email or chat if they have any questions or need assistance with the app.

2. Administrator Role

2.1 User Management

- **Summary:** The User Management feature provides administrators with comprehensive control over user accounts, allowing them to manage user profiles, teams, and access levels.
- **Description:**
 - **2.1.1 View all user accounts with details (name, email, team, trip history)**
 - The administrator will have access to a user management screen that displays a list of all user accounts. The screen will include details such as the user's name, email address, team membership, and trip history.
 - **2.1.2 Search for specific users by name, email, or team**
 - The administrator will be able to search for specific users by entering their name, email address, or team name.
 - **2.1.3 Create new user accounts with admin-defined roles**
 - The administrator will be able to create new user accounts. They will be able to define the user's role (e.g., participant, team leader, administrator).
 - **2.1.4 Edit user profiles (name, email, password, team)**
 - The administrator will be able to edit user profiles, including the user's name, email address, password, and team membership.
 - **2.1.5 Reset user passwords (with email-based confirmation)**
 - The administrator will be able to reset user passwords. The system will send an email to the user's registered email address with a link to reset their password.
 - **2.1.6 Delete user accounts**
 - The administrator will be able to delete user accounts.
 - **2.1.7 Manage user teams (approve/deny team requests, add/remove users, change teams)**
 - The administrator will be able to manage user teams. They will be able to approve or deny team requests, add or remove users from teams, and change a user's team membership.

2.2 Trip Management

- **Summary:** The Trip Management feature provides administrators with the ability to view, edit, and delete trip data, ensuring data accuracy and integrity.
- **Description:**
 - **2.2.1 View all trips logged by participants with details (date, time, distance, type, mode)**
 - The administrator will have access to a trip management screen that displays a list of all trips logged by participants. The screen will include details such as the date, time, distance, type, and mode of transportation.
 - **2.2.2 Search for specific trips by date, user, or team**
 - The administrator will be able to search for specific trips by entering the date, user name, or team name.
 - **2.2.3 Edit trip details (date, miles, type, mode)**
 - The administrator will be able to edit trip details, including the date, distance, type, and mode of transportation.
 - **2.2.4 Delete trips from the log**
 - The administrator will be able to delete trips from the log.

2.3 Data & Insights

- **Summary:** The Data & Insights feature provides administrators with access to real-time dashboards, data export capabilities, and reporting tools, enabling them to analyze program performance and make informed decisions.
- **Description:**
 - **2.3.1 View real-time dashboard with cumulative data for the current season (miles logged, CO2e reduced, trips logged, active participants)**
 - The administrator will have access to a real-time dashboard that displays cumulative data for the current season, including the total miles logged, CO2e reduced, trips logged, and number of active participants.
 - **2.3.2 View lifetime dashboard with the same metrics as the season dashboard for the lifetime of the program**
 - The administrator will have access to a lifetime dashboard that displays the same metrics as the season dashboard, but for the lifetime of the program.
 - **2.3.3 Export user data in various formats (CSV, Excel)**
 - The administrator will be able to export user data in various formats, such as CSV or Excel. This will allow the administrator to analyze the data in external tools.
 - **2.3.4 Generate reports on user activity, trip data, and program performance**
 - The administrator will be able to generate reports on user activity, trip data, and program performance. This will allow the administrator to track the program's progress and identify areas for improvement.

2.4 Program Management

- **Summary:** The Program Management feature provides administrators with the ability to manage challenges, incentives, announcements, and newsletters, ensuring the program runs smoothly and effectively.
- **Description:**
 - **2.4.1 Manage challenges and incentives (create, edit, delete)**
 - The administrator will be able to create, edit, and delete challenges and incentives. This will allow the administrator to manage the program's challenges and rewards.
 - **2.4.2 Create and edit program announcements**
 - The administrator will be able to create and edit program announcements. This will allow the administrator to communicate important information to users.
 - **2.4.3 Manage newsletter subscriptions (add, remove, send newsletters)**
 - The administrator will be able to manage newsletter subscriptions. They will be able to add or remove users from the newsletter list and send newsletters to subscribers.
 - **2.4.4 Reset overall dashboard at the start of each challenge**
 - The administrator will be able to reset the overall dashboard at the start of each challenge. This will ensure that the dashboard data is accurate and up-to-date for the new challenge.

2.5 System Administration

- **Summary:** The System Administration feature provides administrators with the ability to manage app settings, content, performance, and the backend database, ensuring the app functions optimally.
- **Description:**
 - **2.5.1 Manage app settings (language, theme, notifications)**
 - The administrator will be able to manage app settings, such as the language, theme, and notification settings.
 - **2.5.2 Update app content (FAQ, announcements)**
 - The administrator will be able to update app content, such as the FAQ section and program announcements.
 - **2.5.3 Monitor app performance (usage statistics, error logs)**
 - The administrator will be able to monitor app performance, including usage statistics and error logs. This will allow the administrator to identify any issues with the app and make necessary improvements.
 - **2.5.4 Access backend database for troubleshooting and data analysis**
 - The administrator will have access to the backend database for troubleshooting and data analysis. This will allow the administrator to identify and resolve any issues with the app's data and functionality.

3. Team Leader Role (Potential)

3.1 Team Management

- **Summary:** The Team Management feature provides team leaders with the ability to manage their team members, communicate with them, and track their progress, fostering collaboration and motivation.
- **Description:**
 - **3.1.1 View team members with details (name, email, trip history)**
 - The team leader will have access to a screen that displays a list of all team members. The screen will include details such as the member's name, email address, and trip history.
 - **3.1.2 Add/remove team members (requires admin approval)**
 - The team leader will be able to add or remove team members. However, these changes will require administrator approval.
 - **3.1.3 Communicate with team members via in-app messaging**
 - The team leader will be able to communicate with team members via in-app messaging. This will allow the team leader to share updates, provide encouragement, and coordinate team activities.

- **3.1.4 View team progress (miles logged, trips logged, CO2e reduced)**
 - The team leader will be able to view the team's progress, including the total miles logged, trips logged, and CO2e reduced.
- **3.1.5 Set team goals (e.g., target mileage for the season)**
 - The team leader will be able to set team goals, such as a target mileage for the season. This will allow the team to work together to achieve a common goal.

Note: This detailed breakdown provides a comprehensive overview of the functional hierarchy for each user role. The specific implementation details will depend on the chosen technology stack and development approach.